

1 **R317. Environmental Quality, Water Quality.**

2 **R317-4. Onsite Wastewater Systems.**

3 **R317-4-1. Definitions.**

4 1.1. "Absorption bed" means an absorption system consisting  
5 of a covered, gravel-filled bed into which septic tank effluent is  
6 discharged through specially designed distribution pipes for  
7 seepage into the soil.

8 1.2. "Absorption system" means a device constructed to  
9 receive and to distribute effluent in such a manner that the  
10 effluent is effectively filtered and retained below ground  
11 surface.

12 1.3. "Absorption trench" means standard trenches, shallow  
13 trenches with capping fill, and chambered trenches constructed to  
14 receive and to distribute effluent in such a manner that the  
15 effluent is effectively filtered and retained below ground  
16 surface.

17 1.4. "Alternative onsite wastewater system" means a system  
18 for treatment and disposal of domestic wastewater or wastes which  
19 consists of a building sewer, a septic tank or other sewage  
20 treatment or storage unit, and a disposal facility or method which  
21 is not a conventional system; but not including a surface  
22 discharge to the waters of the state.

23 1.5. "At-Grade" System means an alternative type of onsite  
24 wastewater system where the bottom of the absorption system is  
25 placed at or below the elevation of the existing site grade, and  
26 the top of the distribution pipe is above the elevation of  
27 existing site grade, and the absorption system is contained within  
28 a fill body that extends above that grade.

29 1.6. "Bedrock" means the solid rock beneath the soil which  
30 is produced by the gradual weathering of bedrock, through  
31 physical and chemical processes leading to increasingly smaller  
32 and finer particles, loose sediments, or other unconsolidated  
33 material, and superficial rock.

34 [~~1.6~~]1.7. "Bedroom" means any portion of a dwelling which is  
35 so designed as to furnish the minimum isolation necessary for use  
36 as a sleeping area. It may include, but is not limited to, a den,  
37 study, sewing room, sleeping loft, or enclosed porch. Unfinished  
38 basements shall be counted as a minimum of one additional bedroom.

39 [~~1.7~~]1.8. "Building sewer" means the pipe which carries  
40 wastewater from the building drain to a public sewer, an onsite  
41 wastewater system or other point of disposal. It is synonymous  
42 with "house sewer".

43 [~~1.8~~]1.9. "Chambered trench" means a type of absorption  
44 system where the media consists of an open bottom, chamber  
45 structure of an approved material and design, which may be used as  
46 a substitute for the gravel media with a perforated distribution  
47 pipe.

48 [~~1.9~~]1.10. "Condominium" means the ownership of a single  
49 unit in a multi-unit project together with an undivided interest  
50 in common, in the common areas and facilities of the property.

51       ~~[1.10]~~ 1.11. "Conventional system" means an onsite wastewater  
52 system which consists of a building sewer, a septic tank, and an  
53 absorption system consisting of a standard trench, a shallow  
54 trench with capping fill, a chambered trench, a deep wall trench,  
55 a seepage pit, or an absorption bed.

56       ~~[1.11]~~ 1.12. "Curtain drain" means any ground water  
57 interceptor or drainage system that is gravel backfilled and is  
58 intended to interrupt or divert the course of shallow ground water  
59 or surface water away from the onsite wastewater system.

60       ~~[1.12]~~ 1.13. "Deep wall trench" means an absorption system  
61 consisting of deep trenches filled with clean, coarse filter  
62 material, with a minimum sidewall absorption depth of 24 inches of  
63 suitable soil formation below the distribution pipe, into which  
64 septic tank effluent is discharged for seepage into the soil.

65       ~~[1.13]~~ 1.14. "Division" means the Utah Division of Water  
66 Quality.

67       ~~[1.14]~~ 1.15. "Disposal area" means the entire area used for  
68 the subsurface treatment and dispersion of septic tank effluent by  
69 an absorption system.

70       ~~[1.15]~~ 1.16. "Distribution box" means a watertight structure  
71 which receives septic tank effluent and distributes it  
72 concurrently, in essentially equal portions, into two or more  
73 distribution pipes leading to an absorption system.

74       ~~[1.16]~~ 1.17. "Distribution pipe" means approved perforated  
75 pipe used in the dispersion of septic tank effluent into an  
76 absorption system.

77       ~~[1.17]~~ 1.18. "Domestic wastewater" means a combination of the  
78 liquid or water-carried wastes from residences, business  
79 buildings, institutions, and other establishments with installed  
80 plumbing facilities, together with those from industrial  
81 establishments, excluding non-domestic wastewater. It is  
82 synonymous with the term "sewage".

83       ~~[1.18]~~ 1.19. "Domestic septage" means the semi-liquid  
84 material that is pumped out of septic tanks receiving domestic  
85 wastewater. It consists of the sludge, the liquid, and the scum  
86 layer of the septic tank.

87       ~~[1.19]~~ 1.20. "Drainage system" means all the piping within  
88 public or private premises, which conveys sewage or other liquid  
89 wastes to a legal point of treatment and disposal, but does not  
90 include the mains of a public sewer system or a public sewage  
91 treatment or disposal plant.

92       ~~[1.20]~~ 1.21. "Drop box" means a watertight structure which  
93 receives septic tank effluent and distributes it into one or more  
94 distribution pipes, and into an overflow leading to another drop  
95 box and absorption system located at a lower elevation.

96       ~~[1.21]~~ 1.22. "Dwelling" means any structure, building, or any  
97 portion thereof which is used, intended, or designed to be  
98 occupied for human living purposes including, but not limited to,  
99 houses, mobile homes, hotels, motels, apartments, business, and  
100 industrial establishments.

101       ~~[1.22]~~1.23. "Earth fill" means an excavated or otherwise  
102 disturbed suitable soil which is imported and placed over the  
103 native soil. It is characterized by having no distinct horizons  
104 or color patterns, as found in naturally developed undisturbed  
105 soils.

106       ~~[1.23]~~1.24. "Effluent lift pump" means a pump used to lift  
107 septic tank effluent to a disposal area at a higher elevation than  
108 the septic tank.

109       ~~[1.24]~~1.25. "Ejector pump" means a device to elevate or pump  
110 untreated sewage to a septic tank, public sewer, or other means of  
111 disposal.

112       ~~[1.25]~~1.26. "Experimental onsite wastewater system" means an  
113 onsite wastewater treatment and disposal system which is still in  
114 experimental use and requires further testing in order to provide  
115 sufficient information to determine its acceptance.

116       ~~[1.26]~~1.27. "Final local health department approval" means,  
117 for the purposes of the grandfather provisions in R317-4-2 (Table  
118 1, footnote a) and R317-4-3, the approval given by a local health  
119 department which would allow construction and installation of  
120 subdivision improvements. Note: Even though final local health  
121 department approval may have been given for a subdivision,  
122 individual lot approval would still be required for issuance of a  
123 building permit on each lot.

124       ~~[1.27]~~1.28. "Ground water" means that portion of subsurface  
125 water that is in the zone of soil saturation.

126       ~~[1.28]~~1.29. "Ground water table" means the surface of a body  
127 of unconfined ground water in which the pressure is equal to that  
128 of the atmosphere.

129       ~~[1.29]~~1.30. "Ground water table, perched" means unconfined  
130 ground water separated from an underlying body of ground water by  
131 an unsaturated zone. Its water table is a perched water table.  
132 It is underlain by a restrictive strata or impervious layer.  
133 Perched ground water may be either permanent, where recharge is  
134 frequent enough to maintain a saturated zone above the perching  
135 bed, or temporary, where intermittent recharge is not great or  
136 frequent enough to prevent the perched water from disappearing  
137 from time to time as a result of drainage over the edge of or  
138 through the perching bed.

139       ~~[1.30]~~1.31. "Impervious strata" means a layer which prevents  
140 water or root penetration. In addition, it shall be defined as  
141 having a percolation rate greater than 60 minutes per inch.

142       ~~[1.31]~~1.32. "Invert" is the lowest portion of the internal  
143 cross section of a pipe or fitting.

144       ~~[1.32]~~1.33. "Liquid waste operation" means any business  
145 activity or solicitation by which liquid wastes are collected,  
146 transported, stored, or disposed of by a collection vehicle. This  
147 shall include, but not be limited to, the cleaning out of septic  
148 tanks, sewage holding tanks, chemical toilets, and vault privies.

149       ~~[1.33]~~1.34. "Liquid waste pumper" means any person who  
150 conducts a liquid waste operation business.

151       ~~[1.34]~~ 1.35. "Local health department" means a city-county or  
152 multi-county local health department established under Title 26A.  
153       ~~[1.35]~~ 1.36. "Lot" means a portion of a subdivision, or any  
154 other parcel of land intended as a unit for transfer of ownership  
155 or for development or both and shall not include any part of the  
156 right-of-way of a street or road.  
157       ~~[1.36]~~ 1.37. "Malfunctioning or failing system" means an  
158 onsite wastewater system which is not functioning in compliance  
159 with the requirements of this regulation and includes, but is not  
160 limited to, the following:  
161       A. Absorption systems which seep or flow to the surface of  
162 the ground or into waters of the state.  
163       B. Systems which have overflow from any of their components.  
164       C. Systems which, due to failure to operate in accordance  
165 with their designed operation, cause backflow into any portion of  
166 a building plumbing system.  
167       D. Systems discharging effluent which does not comply with  
168 applicable effluent discharge standards.  
169       E. Leaking septic tanks.  
170       ~~[1.37]~~ 1.38. "Maximum ground water table" means the highest  
171 elevation that the top of the "ground water table" or "ground  
172 water table, perched" is expected to reach for any reason over the  
173 full operating life of the onsite wastewater system at that site.  
174       ~~[1.38]~~ 1.39. "Mound System" means an alternative onsite  
175 wastewater system where the bottom of the absorption system is  
176 placed above the elevation of the existing site grade, and the  
177 absorption system is contained in a mounded fill body above that  
178 grade.  
179       ~~[1.39]~~ 1.40. "Non-domestic wastewater" means process  
180 wastewater originating from the manufacture of specific products.  
181 Such wastewater is usually more concentrated, more variable in  
182 content and rate, and requires more extensive or different  
183 treatment than domestic wastewater.  
184       ~~[1.40]~~ 1.41. "Non-public water source" means a culinary water  
185 source that is not defined as a public water source.  
186       ~~[1.41]~~ 1.42. "Onsite Wastewater System" means an underground  
187 wastewater disposal system for domestic wastewater which is  
188 designed for a capacity of 5,000 gallons per day or less, and is  
189 not designed to serve multiple dwelling units which are owned by  
190 separate owners except condominiums. It usually consists of a  
191 building sewer, a septic tank and an absorption system.  
192       ~~[1.42]~~ 1.43. "Percolation rate" means the time expressed in  
193 minutes per inch required for water to seep into saturated soil at  
194 a constant rate during a percolation test.  
195       ~~[1.43]~~ 1.44. "Percolation test" means the method used to  
196 measure the percolation rate of water into soil as described in  
197 these rules.  
198       ~~[1.44]~~ 1.45. "Permeability" means the rate at which a soil  
199 transmits water when saturated.  
200       ~~[1.45]~~ 1.46. "Person" means an individual, trust, firm,

201 estate, company, corporation, partnership, association, state,  
202 state or federal agency or entity, municipality, commission, or  
203 political subdivision of a state (Section 19-1-103).

204 ~~[1.46]~~1.47. "Pollution" means any man-made or man-induced  
205 alteration of the chemical, physical, biological, or radiological  
206 integrity of any waters of the state, unless the alteration is  
207 necessary for public health and safety (Section 19-5-102).

208 ~~[1.47]~~1.48. "Public health hazard" means, for the purpose of  
209 this rule, a condition whereby there are sufficient types and  
210 amounts of biological, chemical, or physical agents relating to  
211 water or sewage which are likely to cause human illness, disorders  
212 or disability. These include, but are not limited to, pathogenic  
213 viruses and bacteria, parasites, toxic chemicals and radioactive  
214 isotopes. A malfunctioning onsite wastewater system constitutes a  
215 public health hazard.

216 ~~[1.48]~~1.49. "Public water source" means a culinary water  
217 source, either publicly or privately owned, providing water for  
218 human consumption and other domestic uses, as defined in R309.

219 ~~[1.49]~~1.50. "Regulatory Authority" means either the Utah  
220 Division of Water Quality or the local health department having  
221 jurisdiction.

222 ~~[1.50]~~1.51. "Replacement area" means sufficient land with  
223 suitable soil, excluding streets, roads, and permanent structures,  
224 which complies with the setback requirements of these rules, and  
225 is intended for the 100 percent replacement of absorption systems.

226 ~~[1.51]~~1.52. "Restrictive layer" means a layer in the soil  
227 that because of its structure or low permeability does not allow  
228 water entering from above to pass through as rapidly as it  
229 accumulates. During some part of every year, a restrictive layer  
230 is likely to have temporarily perched ground water table  
231 accumulated above it.

232 1.53. Scarification - loosening and breaking up of soil.

233 ~~[1.52]~~1.54. "Scum" means a mass of sewage solids floating on  
234 the surface of wastes in a septic tank which is buoyed up by  
235 entrained gas, grease, or other substances.

236 ~~[1.53]~~1.55. "Seepage pit" means an absorption system  
237 consisting of a covered pit into which septic tank effluent is  
238 discharged.

239 ~~[1.54]~~1.56. "Septic tank" means a watertight receptacle  
240 which receives the discharge of a drainage system or part thereof,  
241 designed and constructed so as to retain solids, digest organic  
242 matter through a period of detention and allow the liquids to  
243 discharge into the soil outside of the tank through an absorption  
244 system meeting the requirements of these rules.

245 ~~[1.55]~~1.57. "Septic tank effluent" means partially treated  
246 sewage which is discharged from a septic tank.

247 ~~[1.56]~~1.58. "Sewage holding tank" means a watertight  
248 receptacle which receives water-carried wastes from the discharge  
249 of a drainage system and retains such wastes until removal and  
250 subsequent disposal at an approved site or treatment facility.

251 ~~[1.57]~~1.59. "Shall" means a mandatory requirement except  
252 when modified by action of the Department on the basis of  
253 justifying facts submitted as part of plans and specifications for  
254 a specific installation.

255 ~~[1.58]~~1.60. "Shallow trenches with capping fill" means an  
256 absorption trench which meets all of the requirements of standard  
257 trenches except for the elevation of the installed trench. The  
258 minimum depth of installation is 10 inches from the natural  
259 existing grade to the trench bottom. The gravel and soil fill  
260 required above the pipe are placed as a "cap" to the trenches,  
261 installed above the natural existing grade.

262 ~~[1.59]~~1.61. "Should" means recommended or preferred and is  
263 intended to mean a desirable standard.

264 ~~[1.60]~~1.62. "Single-family dwelling" means a building  
265 designed to be used as a home by the owner or lessee of such  
266 building, and shall be the only dwelling located on a lot with the  
267 usual accessory buildings.

268 ~~[1.61]~~1.63. "Sludge" means the accumulation of solids which  
269 have settled in a septic tank or a sewage holding tank.

270 ~~[1.62]~~1.64. "Soil exploration pit" means an open pit dug to  
271 permit examination of the soil to evaluate its suitability for  
272 absorption systems.

273 ~~[1.63]~~1.65. "Standard Trench" means an absorption system  
274 consisting of a series of covered, gravel-filled trenches into  
275 which septic tank effluent is discharged through specially  
276 designed distribution pipes for seepage into the soil.

277 ~~[1.64]~~1.66. "Waste" or "Pollutant" means dredged spoil,  
278 solid waste, incinerator residue, sewage, garbage, sewage sludge,  
279 munitions, chemical wastes, biological materials, radioactive  
280 materials, heat, wrecked or discarded equipment, rock, sand,  
281 cellar dirt, and industrial, municipal, and agricultural waste  
282 discharged into water (Section 19-5-102).

283 ~~[1.65]~~1.67. "Wastewater" means sewage, industrial waste or  
284 other liquid substances which might cause pollution of waters of  
285 the state. Intercepted ground water which is uncontaminated by  
286 wastes is not included.

287 ~~[1.66]~~1.68. "Waters of the state" means all streams, lakes,  
288 ponds, marshes, watercourses, waterways, wells, springs,  
289 irrigation systems, drainage systems, and all other bodies or  
290 accumulations of water, surface and underground, natural or  
291 artificial, public or private, which are contained within, flow  
292 through, or border upon this state or any portion thereof, except  
293 that bodies of water confined to and retained within the limits of  
294 private property, and which do not develop into or constitute a  
295 nuisance, or a public health hazard, or a menace to fish and  
296 wildlife, are not "waters of the state" (Section 19-5-102).

297  
298 **R317-4-2. Onsite Wastewater Systems Administrative Requirements.**  
299 2.1. Scope. This rule shall apply to onsite wastewater

300 systems.

301 2.2. Nothing contained in this rule shall be construed to  
302 prevent the permitting local health department from:

303 A. adopting stricter requirements than those contained  
304 herein;

305 B. issuing a renewable operating permit at a frequency not  
306 exceeding five years with an inspection showing a satisfactory  
307 performance of the permitted system by the department's staff  
308 before renewal;

309 C. taking necessary steps for ground water quality  
310 protection through adoption of a ground water quality protection  
311 management policy based on a ground water management study, or a  
312 onsite systems management planning policy and land use planning  
313 through the county's agency;

314 D. prohibiting any alternative system within the  
315 department's jurisdiction;

316 E. assessing fees for administration of alternative systems

317 F. requiring the conventional and alternative system in its  
318 jurisdiction, be placed under an umbrella of:

319 1. a responsible management entity overseen by the local  
320 health department; or,

321 2. a contract service provider overseen by the local health  
322 department; or

323 3. a management district, body politic, created by the  
324 county for the purpose of operation, maintenance, repairs and  
325 monitoring of alternative or all onsite systems;

326 G. The local health department having jurisdiction must  
327 obtain approval from the Utah Water Quality Board to administer  
328 alternative systems program, as outlined in this section, before  
329 permitting alternative systems.

330 H. The local health department request for approval must  
331 include:

332 1. A description of its plan to properly manage these  
333 systems to protect public health. This plan must include:

334 a. A description of review, inspection and monitoring  
335 procedures of these systems;

336 b. Resolutions of the Local Board of Health and the County  
337 Commission supporting this request

338 c. A description of the technical capability and training  
339 plans of the staff, and availability of resources to adequately  
340 manage the increased work load; and,

341 d. A statement from the county attorney of the county's  
342 legal authority to implement and enforce correction of  
343 malfunctioning systems and its commitment to exercise this  
344 authority.

345 I. An agreement to:

346 1. advise the owner of the system of the type of system,  
347 and information concerning risk of failure, level of maintenance  
348 required, financial liability for repair, modification or  
349 replacement of a failed system and periodic monitoring

350 requirements;  
351 2. ensure the existence of the alternative system is  
352 recorded on the deed of ownership for that property;  
353 3. provide oversight of installed systems;  
354 4. inspect all installed systems at frequency specified in  
355 this rule, through:  
356 a. the department's staff, or,  
357 b. a contracted service provider, or,  
358 c. a responsible management entity, or,  
359 d. a management district *body politic* created by the county  
360 for the purpose of managing onsite systems:  
361 e. maintain records of all installed systems, failures,  
362 modifications, repairs and all inspections recording the  
363 condition of the system at the time of inspection such as, but  
364 not limited to, overflow, surfacing, ponding and nuisance;  
365 5. Submit an annual report on or before September 1 of the  
366 calendar year, to the Utah Water Quality Board showing:  
367 a. A summary of a ground water quality protection  
368 management policy based on a ground water management study, or a  
369 onsite systems management planning policy and land use planning  
370 through the county's agency, including steps taken or planned to  
371 be taken for implementation of the policy.  
372 b. type and number of systems approved, installed,  
373 modified, repaired, failed, inspected;  
374 c. a summary of enforcement actions taken, pending and  
375 resolved;  
376 d. a summary of performance of effluent quality showing  
377 concentrations of five-day total or carbonaceous biochemical  
378 oxygen demand, total suspended solids, nephelometric turbidity  
379 units, total nitrogen and Escherichia Coli of all installed  
380 systems except for at-grade, earth fill and mound systems;  
381 e. a summary of the performance of contractors, responsible  
382 management entities, or management districts operating,  
383 maintaining and monitoring alternative systems; and,  
384 f. management options followed in the reporting year and  
385 planned to be followed in the period after the reporting period.  
386 J. Description of Management options to be followed:  
387 1. Using the health department staff for all inspections  
388 and monitoring of permitted alternative systems; or,  
389 2. Contracting with a responsible management entity  
390 employing qualified service providers for operating, maintaining  
391 and monitoring alternative systems, certified in accordance with  
392 R317-11; or,  
393 3. Using a management district, body politic created by the  
394 county for the purpose of managing onsite systems with an annual  
395 performance review;, or,  
396 4. An appropriate combination of contract providers or a  
397 District, body politic.  
398 K. All alternative systems will be inspected as follows:  
399 1. All at-grade, earth fill and mound systems annually by

400 a. the local health department staff, or,  
401 b. a contract service provider overseen by the local health  
402 department, or,  
403 c. a responsible management entity overseen by the local  
404 health department, or,  
405 d. a management district, body politic created by the  
406 county for the purpose of managing onsite systems.  
407 2. All packed bed media systems at least twice a year by:  
408 a. the local health department staff, or,  
409 b. a contract service provider overseen by the local health  
410 department, or,  
411 c. a responsible management entity overseen by the local  
412 health department, or,  
413 d. a management district, body politic created by the  
414 county for the purpose of managing onsite systems.  
415 ~~[2-2]~~2.3. Failure to Comply With Rules. Any person failing  
416 to comply with This rule will be subject to action as specified in  
417 Section 19-5-115 and 26A-1-123.  
418 ~~[2-3]~~2.4. Onsite Wastewater System Required. The drainage  
419 system of each dwelling, building or premises covered herein shall  
420 receive all wastewater (including but not limited to bathroom,  
421 kitchen, and laundry wastes) and shall have a connection to a  
422 public sewer except when such sewer is not available or  
423 practicable for use, in which case connection shall be made as  
424 follows:  
425 A. To an onsite wastewater system found to be adequate and  
426 constructed in accordance with requirements stated herein.  
427 B. To any other type of wastewater system acceptable under  
428 R317-1, R317-3, R317-5, or R317-560.  
429 ~~[2-4]~~2.5. Flows Prohibited From Entering Onsite Wastewater  
430 Systems. No ground water drainage, drainage from roofs, roads,  
431 yards, or other similar sources shall discharge into any portion  
432 of an onsite wastewater system, but shall be disposed of so they  
433 will in no way affect the system. Non domestic wastes such as  
434 chemicals, paints, or other substances which are detrimental to  
435 the proper functioning of an onsite wastewater system shall not be  
436 disposed of in such systems.  
437 ~~[2-5]~~2.6. No Discharge to Surface Waters or Ground Surface.  
438 Effluent from any onsite wastewater system shall not be discharged  
439 to surface waters or upon the surface of the ground. Sewage shall  
440 not be discharged into any abandoned or unused well, or into any  
441 crevice, sinkhole, or similar opening, either natural or  
442 artificial.  
443 ~~[2-6]~~2.7. Repair of a Failing or Unapproved System. Whenever  
444 an onsite wastewater system is found by the regulatory authority  
445 to create or contribute to any dangerous or insanitary condition  
446 which may involve a public health hazard, a malfunctioning system,  
447 or deviates from the plans and specifications approved by such  
448 health authorities, the regulatory authority may order the owner  
449 to take the necessary action to cause the condition to be

450 corrected, eliminated or otherwise come into compliance.

451 ~~[2.7]~~2.8. Procedure for Wastewater System Abandonment.

452 A. When a dwelling served by an onsite wastewater system is  
453 connected to a public sewer, the septic tank shall be abandoned  
454 and shall be disconnected from and bypassed with the building  
455 sewer unless otherwise approved by the regulatory authority.

456 B. Whenever the use of an onsite wastewater system has been  
457 abandoned or discontinued, the owner of the real property on which  
458 such wastewater system is located shall render it safe by having  
459 the septic tank wastes pumped out or otherwise disposed of in an  
460 approved manner, and the septic tank filled completely with earth,  
461 sand, or gravel within 30 days. The septic tank may also be  
462 removed within 30 days, at the owners discretion. The contents  
463 of a septic tank or other treatment device shall be disposed of  
464 only in a manner approved by the regulatory authority.

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465 Sections R317-4-3 through 10 are not included as there is no  
466 change in those sections. A complete copy is available from the  
467 Division of Water Quality if desired.

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470  
471 **R317-4-11. Alternative [~~Onsite Wastewater~~] Systems.**

472 11.1. General Requirements.

473 A. The health department will review and approve sufficient  
474 design, installation and operating information to produce a  
475 successful, properly operating installation from a designer  
476 certified at Level 3 in accordance with the requirements of R317-  
477 11.

478 B. The designer must submit operation and maintenance  
479 instructions for the system to the health department and to the  
480 owner. The instructions must describe the activities necessary to  
481 properly operate and maintain the system. Trouble shooting  
482 information must also be included.

483 C. All requirements stated elsewhere in this rule for  
484 design, construction and installation details, performance,  
485 failures, repairs and abandonment shall apply unless stated  
486 differently for a given alternative system.

487 11.2. At-Grade Systems.

488 A. Design Requirements.

489 1. Absorption trenches and absorption bed type absorption  
490 systems may be placed in the at-grade position provided:

491 a. Invert of effluent distribution pipe or the bottom of the  
492 absorption trench is placed at the native ground surface.

493 b. the elevation of the anticipated maximum ground water  
494 table shall be:

495 i. at least 24 inches below the bottom of the absorption  
496 system excavation; and,

497 ii. at least 48 inches below finished grade.

498 c. at least 48 inches of suitable soil percolating between:

499 i. one and 60 minutes per inch for absorption trench, or,

500 ii. one to 30 minutes per inch for absorption beds is  
501 available between bedrock or impervious strata and the bottom of  
502 the absorption system excavation.  
503 d. The native ground surface does not slope more than four  
504 percent for installation of an at-grade system.  
505 e. all other requirements of this rule for:  
506 i. minimum horizontal distances from the stated feature to  
507 the toe of the finished at-grade system in Table 2,  
508 ii. area requirements and construction details for  
509 absorption trenches in Tables 7, 8 and 9,  
510 iii. area requirements and construction details for  
511 absorption beds in Tables 13 and 14, are met.  
512 2. Minimum of two observation ports shall be provided within  
513 absorption area.  
514 B. Construction Details.  
515 1. The site shall be cleared of vegetation.  
516 2. The soil at the surface shall be loosened and broken up  
517 to an approximate depth of six inches.  
518 3. No tilling shall be permitted.  
519 4. Any furrows resulting from the scarification shall be  
520 perpendicular to any slope on the site.  
521 5. When fill is placed where finished contours are above the  
522 natural ground surface, it shall extend from the center of the  
523 wastewater system at the same general top elevation for a minimum  
524 of ten feet in all directions beyond the limits of the disposal  
525 area perimeter below, before the beginning of the side slope.  
526 6. The site shall be graded such that surface water drains  
527 away from the onsite wastewater system and adjoining area.  
528 7. The maximum side slope for above ground fill shall be  
529 four (horizontal) to one (vertical).  
530 11.3 Earth fill systems.  
531 A. Design Requirements.  
532 1. Earth fill may be added to a site or naturally existing  
533 soil with a percolation rate less than one minute per inch or more  
534 than 60 minutes per inch may be removed and replaced with earth  
535 fill with an acceptable, in-place percolation rate, if:  
536 2. the removal of the original soil does not cause other  
537 unacceptable site conditions, and, wastewater ponding will not  
538 occur below the bottom of the absorption system;  
539 3. the elevation of the anticipated maximum ground water  
540 table shall be at least 12 inches below the natural ground  
541 surface.  
542 4. Minimum depth of suitable soil percolating between one  
543 and 60 minutes per inch available between bedrock or impervious  
544 strata and:  
545 a. the native ground surface must not be less than 36  
546 inches, or,  
547 b. the bottom of the absorption system trench must not be  
548 less than 48 inches, which ever is greater.  
549 5. all other requirements of this rule for:

550 a. minimum horizontal distances in Table 2,  
551 b. area requirements and construction details for  
552 absorption trenches in Tables 7, 8 and 9, are met.  
553 6. The fill area shall be sufficient to:  
554 a. accommodate an absorption system for a home with a  
555 minimum of three bedrooms, and shall include all required  
556 clearances within, and outside of the fill and absorption system  
557 area.  
558 b. install a system sized for greater of three bedrooms or  
559 the planned number of bedrooms in the home, using the percolation  
560 rate of 60 minutes per inch.  
561 c. include the area required for a 100 percent replacement  
562 of the absorption system, with all required clearances.  
563 7. The area between trenches shall not be used for  
564 replacement area.  
565 8. The earth fill shall be considered to be acceptably  
566 stabilized if it is allowed to naturally settle for a minimum  
567 period of one year, sized to result in its minimum required  
568 dimensions after the settling period. Mechanical compaction shall  
569 not be allowed.  
570 9. After the fill has settled for a minimum of one year,  
571 a minimum of two (2) percolation tests/soil exploration tests  
572 shall be conducted in the fill. One shall be conducted in the  
573 proposed absorption system area and one in the proposed  
574 replacement area of the fill. The suitably stabilized fill shall  
575 have an in-place percolation rate of between 15 and 45 minutes per  
576 inch.  
577 10. Maximum acceptable slope of original site surface for  
578 placement of an earth fill system is four percent.  
579 11. The fill depth below the bottom of the absorption system  
580 to the native ground surface shall not exceed six feet.  
581 12. Minimum of two observation ports shall be provided  
582 within absorption area.  
583 B. Construction Details.  
584 1. The site shall be cleared of vegetation.  
585 2. The surface soil shall be loosened and broken up to an  
586 approximate depth of six inches.  
587 3. No tilling shall be permitted.  
588 4. Any furrows resulting from the scarification shall be  
589 perpendicular to any slope on the site.  
590 5. The site shall be graded such that surface water drains  
591 away from the onsite wastewater system and adjoining area.  
592 6. The maximum exposed side slope for fill surfaces shall be  
593 four horizontal to one vertical.  
594 7. When fill is placed where finished contours are above the  
595 natural ground surface, it shall extend from the center of the  
596 wastewater system at the same general top elevation for a minimum  
597 of ten feet in all directions beyond the limits of the disposal  
598 area perimeter below, before the beginning of the side slope.  
599 8. A suitable soil cap, which will support a vegetative

600 cover, shall cover the entire fill body. The cap shall be provided  
601 with a vegetative cover. Access to the fill site shall be  
602 restricted to minimize erosion and other physical damage.

603 11.4 Mound systems.

604 A. Design Requirements.

605 1. Mound system may be built over naturally existing soils  
606 with a percolation rates between one to 60 minutes per inch  
607 provided:

608 a. the elevation of the anticipated maximum ground water  
609 table shall be at least 12 inches below the natural ground  
610 surface.

611 b. a minimum of one foot of approved sand and one foot of  
612 natural soil percolating between one to 60 minutes per inch is  
613 available to form the minimum two feet of unsaturated soil below  
614 the bottom of the absorption system.

615 c. at least 36 inches of suitable soil percolating between  
616 one and 60 minutes per inch is available between bedrock or  
617 impervious strata and the native ground surface.

618 2. all other requirements of this rule for:

619 a. minimum horizontal distances in Table 2, and,

620 b. installation in sloping ground are met.

621 3. The design shall be based on:

622 a. a minimum of 300 gallons per day for two bedrooms with  
623 150 gallons per day for each additional bedroom.

624 b. Linear hydraulic loading rate of:

625 i. three to four gallons per day per foot when the flow is  
626 shallow and primarily lateral, or,

627 ii. eight to ten gallons per day per foot when the flow is  
628 away from the system and primarily downward.

629 c. Sand fill hydraulic loading rate shall not be greater  
630 than 0.8 gallons per day per square foot of absorption system  
631 bottom area.

632 d. Soil (basal) hydraulic loading or application rate at  
633 sand fill to native soil interface using a relationship:  $q$   
634 (gallons per day per square foot) =  $1.2995 \times \text{percolation rate}$   
635 (minutes per inch)  $^{-0.4421}$ , or as shown in Table 15:

636

637 Table 15

638 Effluent loading rates

639 from sand fill to native soil interface

640 (Based on Percolation Test Rates)

641

642 Percolation Rate gallons per day  
643 (time in minutes required per square foot  
644 for water to fall one inch)

645

646 1-10 0,45

647 11-15 0.40

648 16-20 0.35

649 21-30 0.30

650	31-45	0.25
651	46-60	0.20

652  
653 e. Distribution Cell (Refer to the graphic available for  
654 nomenclature from the Division):

655 i. Area (A x B) shall be the ratio of design flow and sand  
656 fill hydraulic loading rate, where the maximum width (A) shall be  
657 ten feet,

658 ii. Length (B) shall be the ratio of:

659 (1). linear hydraulic loading rate and the design flow when  
660 soil application rate is less than 0.3 gallons per day per square  
661 foot, or,

662 (2). linear hydraulic loading rate and the design flow when  
663 soil application rate is less than 0.3 gallons per day per square  
664 foot, or,

665 f. Mound fill depth (D) shall be the difference of a  
666 minimum of four feet of suitable soil percolating between one and  
667 60 minutes per inch under the absorption system (aggregate and  
668 sand fill interface), and, a minimum of two feet.

669 g. Mound fill depth at down slope edge (E) shall be the sum  
670 of Mound fill depth (D) and Absorption area width (A), times the  
671 slope of the native ground surface expressed as a decimal.

672 h. Mound Depth (F) shall be the sum of depth of aggregate  
673 (not less than six inches) and depth of aggregate cover over the  
674 distribution pipe (not less than two inches), and, nominal  
675 diameter of distribution pipe.

676 i. The minimum depth of cover shall be 12 inches at  
677 distribution cell edges (G), and 18 inches at the center of  
678 distribution cell (H).

679 j. Down slope width (I) shall be greater of:

680 i. Fill depth at the down slope edge of distribution cell (  
681 Mound fill depth at down slope edge (E) + Mound Depth (F) + depth  
682 of cover at distribution cell edges (G)) x horizontal gradient of  
683 side slope (3 if 3:1) x slope correction factor which is (100 /  
684 (100 - (3 x per cent of slope) if 3:1), or,

685 ii. difference of ratio of linear loading and soil  
686 application rates and liner loading and sand fill loading rates.

687 k. Up slope width (J) shall be: Fill depth at the up slope  
688 edge of distribution cell ( Mound fill depth (D) + Mound Depth  
689 (F) + depth of cover at distribution cell edges (G)) x horizontal  
690 gradient of side slope (3 if 3:1) x slope correction factor which  
691 is (100 / (100 +(3 x per cent of slope) if 3:1).

692 l. End slope width (K) shall be: Total fill at the center  
693 of distribution cell (Mound fill depth (D) + Mound fill depth at  
694 down slope edge (E))/2) + Mound Depth (F) + depth of cover at the  
695 center of distribution cell (H) ) x horizontal gradient of side  
696 slope (3 if 3:1).

697 m. Fill length (L) shall be: Distribution cell length (B) +  
698 2 x end slope width (K).

699 n. Depth, width and length of distribution cell, sand fill

700 and aggregate shall be as required in Mound Component Manual  
701 Version 2, Wisconsin Department of Commerce, January 2001,  
702 available from the Division.  
703 o. Effluent distribution shall be pressurized.  
704 p. Minimum of two observation ports shall be provided within  
705 absorption area.  
706 B. Construction Details.  
707 1. The site shall be cleared of vegetation and scarified to  
708 an approximate depth of six inches. Any furrows resulting from  
709 the scarification shall be perpendicular to any slope on the site.  
710 2. The surface soil shall be loosened and broken up to an  
711 approximate depth of six inches.  
712 3. The site shall be graded such that surface water drains  
713 away from the onsite wastewater system and adjoining area.  
714 4. The minimum thickness of aggregate media around the  
715 distribution pipes of the absorption system shall be the sum of  
716 six inches below the distribution pipe, the diameter of the  
717 distribution pipe and two inches above the distribution pipe or  
718 ten inches, whichever is larger.  
719 5. The material for soil cap shall not be less than six  
720 inches in thickness and provide protection against erosion, frost,  
721 storm water infiltration and support vegetative growth and  
722 aeration of distribution cell.  
723 6. Sand fill must meet ASTM Specification C-33 for fine  
724 aggregate.  
725 7. A minimum of two observation pipes shall be located at  
726 opposite end of each distribution cell and 1/5 to 1/10 the length  
727 of distribution cell measured from the end of the cell.  
728 8. Distribution laterals must be:  
729 a. of 3/4 inch to 3 inch in diameter;  
730 b. placed within four feet of each other within  
731 distribution cell;  
732 c. provided with a stand pipe for access from the surface  
733 for cleaning;  
734 d. provided with orifices:  
735 i. 1/4 or 3/16 inches inch in diameter;  
736 ii. spaced between 30 to 36 inches, and  
737 iii. between six inches to two feet from the edge of  
738 distribution cell.  
739 9. Distal head in a lateral must be no less than 2.5 feet  
740 for 1/4-inch diameter orifice and 3.5 ft for 3/16-inch diameter  
741 orifice.  
742 10. An automatic visual or audible alarm indicating the  
743 failure of the pump shall be provided, and shall remain on until  
744 turned off manually.  
745 11.5. Packed Bed Media systems.  
746 A. Design Requirements.  
747 1. Packed bed media systems may be used provided:  
748 a. the elevation of the anticipated maximum ground water  
749 table shall be at least 12 inches below the natural ground

750 surface.  
751 b. acceptable percolation rate for packed bed media system  
752 effluent dispersal is up to 120 minutes per inch;  
753 c. at least 36 inches of suitable soil below the bottom of  
754 the absorption trench, percolating between one and 120 minutes per  
755 inch is available for packed bed media system effluent dispersal,  
756 between bedrock or impervious strata and the native ground  
757 surface.  
758 d. At least 18 inches of suitable soil percolating between  
759 one and 120 minutes per inch is available for packed bed media  
760 system effluent dispersal, between bedrock or impervious strata  
761 and the native ground surface with an evaluation of infiltration  
762 rate and hydrogeology from a professional geologist or  
763 geotechnical engineer licensed to practice in Utah based on:  
764 i. type, extent of fractures, presence of bedding planes,  
765 angle of dip,  
766 ii. hydrogeology of surrounding area, and,  
767 iii. cumulative effect of all existing and future systems  
768 within the area for any localized mounding or surfacing which may  
769 create a public health hazard or nuisance, description of methods  
770 used to determine infiltration rate and evaluation of surfacing  
771 or mounding conditions.  
772 e. all other requirements of this rule for:  
773 i. installation of absorption trenches in sloping ground,  
774 and,  
775 ii. minimum horizontal distances in Table 2, except for  
776 water course, lake, pond, reservoir, non-culinary spring,  
777 foundation drain, curtain drain or grouted well which require a  
778 minimum of 50 feet of separation from absorption trench are met.  
779 2. The design shall be based on:  
780 a. a minimum of 300 gallons per day for two bedrooms and 150  
781 gallons per day for each additional bedroom.  
782 b. Intermittent Sand Filter System:  
783 i. Media  
784 (1). Depth - Minimum 24 inches of washed sand  
785 (2). Effective size - 0.35 to 0.5 millimeter  
786 (3). Uniformity Coefficient - less than 4.0  
787 (4). Maximum Passing through #200 Sieve - one percent  
788 (5). Voids - 30 percent  
789 (6). Surface area - 800 - 1000 square feet per cubic foot  
790 ii. Maximum Application rate - 1.2 gallons per day per  
791 square foot of media  
792 iii. Doses per day - 18 to 24  
793 iv. Recirculation ratio - none  
794 c. Re-circulating Sand Filter System:  
795 i. Media  
796 (1). Depth - Minimum 24 inches of washed sand  
797 (2). Effective size - 1.5 to 2.5 millimeter  
798 (3). Uniformity Coefficient - less than 3.0  
799 (4). Maximum Passing through #50 Sieve - one percent

- 800 (5). Voids - 30 percent  
801 (6). Surface area - 500 - 700 square feet per cubic foot  
802 ii. Maximum Application rate - 5.0 gallons per day per  
803 square foot of media  
804 iii. Doses per day - 48 -96  
805 iv. Recirculation ratio - 4:1 at peak flow.  
806 d. Re-circulating Gravel Filter System:  
807 i. Media  
808 (1). Depth - Minimum 36 inches of washed gravel  
809 (2). Effective size - 1.5 to 5.0 millimeter  
810 (3). Uniformity Coefficient - less than 2.0  
811 (4). Maximum Passing through #16 Sieve - one percent  
812 (5). Voids - 30 percent  
813 (6). Surface area - 500 - 700 square feet per cubic foot  
814 ii. Maximum Application rate - 5.0 gallons per day per  
815 square foot of media  
816 iii. Doses per day - 48 -96  
817 iv. Recirculation ratio - 4:1 @ peak flow.  
818 d. Re-circulating Gravel Filter System:  
819 i. Media  
820 (1). Depth - Minimum 36 inches of washed gravel  
821 (2). Effective size - 1.5 to 5.0 millimeter  
822 (3). Uniformity Coefficient - less than 2.0  
823 (4). Maximum Passing through #16 Sieve - one percent  
824 (5). Voids - 30 percent  
825 (6). Surface area - 500 - 700 square feet per cubic foot  
826 ii. Application rate - 5.0 gallons per day per square foot  
827 of media  
828 iii. Doses per day - 48 - 96  
829 iv. Recirculation ratio - 5:1 @ peak flow.  
830 e. Textile Filter System:  
831 i. Media  
832 (1). Geotextile, AdvanTex or approved equal  
833 (2). Voids - more than 80 percent  
834 (3). Surface area - 2400 - 4800 square feet per cubic foot  
835 ii. Maximum Application rate - 30.0 gallons per day per  
836 square foot of media  
837 iii. Doses per day - 72 - 144  
838 iv. Recirculation ratio - 3:1 @ peak flow.  
839 f. Peat Filter:  
840 i. Media  
841 (1). Depth - Minimum 24 inches of peat media  
842 (2). Effective size - 0.25 to 2.0 millimeter  
843 (3). Voids - 90 percent  
844 (4). Surface area - 500,000 square feet per cubic foot  
845 ii. Maximum Application rate - 5 gallons per day per square  
846 foot of media  
847 iii. Doses per day - up to 300  
848 iv. Recirculation ratio - none  
849 3. The filter bed must be pressure dosed. Orifices or

850 nozzles shall be of such size that the difference in discharge  
851 between the first orifice or nozzle and the last orifice or  
852 nozzle in each lateral is less than ten percent. The lateral ends  
853 must be equipped with fittings and or enclosures to allow  
854 cleaning and servicing from the surface.

855 4. Recirculation Tank:

856 a. capacity shall be equal to:

857 i. at least design flow for one day, or,

858 ii. other volume supported by the basis of design and  
859 operation.

860 b. design shall include dosing rate, operating, surge and  
861 reserve capacities.

862 c. The recirculation ratio should be adjusted, as necessary  
863 during operation and maintenance inspections; ranging from 3:1 to  
864 7:1.

865 d. Access to the tanks shall be watertight to the finished  
866 grade. Any joint in the riser must be tested during the tank  
867 watertight test.

868 5. Outlet of septic tanks upstream of packed bed media shall  
869 be fitted with effluent filter.

870 6. Pumping Equipment and Controls:

871 a. The system shall be equipped with a programmable control  
872 panel. The controls shall be capable of controlling all  
873 functions incorporated or required in the design of the system.  
874 All system control panels must be equipped with an automatic  
875 visual or audible alarm indicating the failure of the pump shall  
876 be provided, and shall remain on until turned off manually.

877 b. The control panel must include a pump run-time hour  
878 meter and a pump event counter or other acceptable flow  
879 measurement method.

880 c. The control panel must be installed within sight of the  
881 access risers.

882 d. The control panel must be rated for exterior use. The  
883 enclosure must be rated for NEMA 4X or better.

884 e. The pumps shall be capable of delivering the design flow  
885 at the calculated total dynamic head for the proposed system.  
886 Supporting hydraulic calculations and pump curve analysis must be  
887 submitted to the health department with the design.

888 f. The pump selected must be rated for the number of cycles  
889 anticipated at peak flow conditions.

890 7. Packed bed system media effluent shall be distributed by  
891 gravity or under pressure in an absorption trench designed:

892 a. in accordance with Table 7 of this rule for soils  
893 percolating between one to 60 minutes per inch.

894 b. Using the equation:

895 i.  $q = 2.1687 \times t^{(-0.3806)}$  where  $t$  is the percolation  
896 rate in minutes per inch, and  $q$  is in gallons per day per square  
897 foot, or,

898 ii. Area in square feet per bed room =  $69.16 \times t^{(0.3806)}$   
899 where  $t$  is the percolation rate in minutes per inch.

900 c. Dispersal area may be reduced by multiplying the area  
901 reduction factor shown in Table 16:

902  
903 Table 16  
904 Area Reduction Factors

905	System	Factor
906		
907		
908	Intermittent Sand Filter	0.85
909	Re-circulating Sand Filter	0.80
910	Re-circulating Gravel Filter	0.80
911	Textile Filters	0.75
912	Peat Filters	0.80

913  
914 d. Effluent distribution may be by gravity or under  
915 pressure.

916 e. Drip irrigation system may be used for packed bed media  
917 system effluent disposal based on type of soil and drip  
918 irrigation manufacturer's recommendations.

919 f. Minimum of two observation ports shall be provided within  
920 absorption area.

921 8. Performance of Packed Bed Media Systems

922 a. Packed bed media system performance shall be monitored at  
923 an interval not exceeding six calendar months for surfacing in  
924 absorption trench area, odors around filter systems, equipment  
925 malfunction, and effluent quality of a grab sample showing no more  
926 than 20 nephelometric turbidity units (NTU), or five-day total or  
927 carbonaceous biochemical oxygen demand and total suspended solids  
928 concentration of no more than 25 milligrams per liter.

929 b. Effluent turbidity exceeding 20 NTU shall be followed up  
930 with two successive week testing within a 30-day period from the  
931 first exceedance. When two successive effluent testing shows  
932 results in excess of 20 NTU, the system shall be deemed to be non-  
933 compliant requiring further evaluation with five-day total or  
934 carbonaceous biochemical oxygen demand and total suspended solids  
935 concentrations, and a corrective action plan.

936 c. Corrective action is required where the effluent quality  
937 does not meet the minimum standard for more than 30 days.

938 d. For non-complying systems, the health department shall  
939 require and order:

940 i. all necessary steps such as maintenance servicing,  
941 repairs, and/or replacement of system components to correct  
942 malfunctioning or non-compliant system;

943 ii. effluent quality testing for turbidity, five-day total  
944 or carbonaceous biochemical oxygen demand, and suspended solids  
945 shall continue every two weeks until three successive samples are  
946 found to be in compliance;

947 iii. payment of fines, fees for additional inspections  
948 reviews and testing;

949 iv. evaluation of the system design including non-approved

950 changes to the system, and the wastewater flow volume, the  
951 biological and or chemical loading to the system;  
952 v. investigate the household practices, or discharge of  
953 hazardous chemicals into the system, such as, water softener  
954 brine, photo finishing chemicals, laboratory chemicals, excessive  
955 amount of cleaners or detergents, etc.; and,  
956 vi. additional tests or samples to troubleshoot the system  
957 malfunction.

958 B. Construction Details

959 i. The site shall be graded such that surface water drains  
960 away from the onsite wastewater system and adjoining area.

961 ~~[ 11.1. Administrative Requirements. The local health~~  
962 ~~department having jurisdiction must obtain approval from the~~  
963 ~~division to administer an alternative onsite wastewater system~~  
964 ~~program, as outlined in this section, prior to permitting~~  
965 ~~alternative onsite wastewater systems. Alternative onsite~~  
966 ~~wastewater systems are only to be installed where site limitations~~  
967 ~~prevent the use of conventional onsite wastewater systems.~~

968 ~~A. The following alternative onsite wastewater systems may~~  
969 ~~be considered for use upon the executive secretary's approval of a~~  
970 ~~written request from the local health department to administer an~~  
971 ~~alternative onsite wastewater system program.~~

972  
973 TABLE 15

974

975 <u>System</u>	975 <u>Rule Reference</u>
976 <u>Earth fill Systems</u>	976 <u>R317 4 11.2</u>
977 <u>"At Grade" Systems</u>	977 <u>R317 4 11.3</u>
978 <u>Mound Systems</u>	978 <u>R317 4 11.4</u>

979

980 ~~The local health department request for approval must include~~  
981 ~~a description of their plan to properly manage these systems to~~  
982 ~~protect public health and water quality. This plan must include:~~

983 ~~1. Documentation of the adequacy of staff resources to~~  
984 ~~manage the increased work load.~~

985 ~~2. Documentation of the technical capability to administer~~  
986 ~~the new systems including any training plans which are needed.~~

987 ~~3. A description of measures to be taken by the local health~~  
988 ~~department to insure that designers and installers of these~~  
989 ~~systems are qualified.~~

990 ~~4. A description of the methods which will be used to~~  
991 ~~determine the maximum anticipated high ground water table~~  
992 ~~elevation.~~

993 ~~5. Documentation that the Local Board of Health and County~~  
994 ~~Commission support this request.~~

995 ~~6. A description of how these systems will be managed,~~  
996 ~~inspected and monitored.~~

997 ~~7. A ground water management plan which identifies maximum~~  
998 ~~septic system densities to be allowed in order to prevent~~  
999 ~~unacceptable degradation of ground water, or a schedule for~~

1000 completing an acceptable plan within one year. This requirement  
1001 may be waived or modified by the executive secretary where it can  
1002 be shown that these systems would be relatively few in number and  
1003 widely separated, thereby having negligible impact on ground water  
1004 quality, or where the ground water aquifers vary greatly over  
1005 relatively short distances making such a ground water study  
1006 impractical.

1007 ~~8. Documentation of the county's legal authority to~~  
1008 ~~implement and enforce correction of malfunctioning systems and~~  
1009 ~~their commitment to exercise this authority.~~

1010 ~~B. All alternative onsite wastewater systems shall be~~  
1011 ~~designed, installed and operated under the following conditions:~~

1012 ~~1. The ground water requirements shall be determined as~~  
1013 ~~shown in R317 4 5.~~

1014 ~~2. The local health department must advise the owner of the~~  
1015 ~~system of the alternative status of that type of system. The~~  
1016 ~~advisory must contain information concerning risk of failure,~~  
1017 ~~level of maintenance required, financial liability for repair,~~  
1018 ~~modification or replacement of a failed system and periodic~~  
1019 ~~monitoring requirements which are all specific to the type of~~  
1020 ~~system to be installed.~~

1021 ~~3. The local health department and the homeowner shall be~~  
1022 ~~provided with sufficient design, installation and operating~~  
1023 ~~information to produce a successful, properly operating~~  
1024 ~~installation.~~

1025 ~~4. The local health department is responsible for provision~~  
1026 ~~of, or oversight of an approved installation, inspection and~~  
1027 ~~maintenance and monitoring program for the systems. Such programs~~  
1028 ~~shall include approved procedures for complete periodic~~  
1029 ~~maintenance and monitoring of the systems.~~

1030 ~~5. The local health department may impose more stringent~~  
1031 ~~design, installation, operating and monitoring conditions than~~  
1032 ~~those required by the Division.~~

1033 ~~6. All failures, repairs or alterations shall be reported to~~  
1034 ~~the local health department. All repairs or alterations must be~~  
1035 ~~approved by the local health department.~~

1036 ~~C. When an alternative onsite wastewater system exists on a~~  
1037 ~~property, notification of the existence of that system shall be~~  
1038 ~~recorded on the deed of ownership for that property.~~

1039 ~~11.2. Installation in Earth Fill.~~

1040 ~~A. Installation of absorption systems in earth fill will be~~  
1041 ~~allowed only by the regulatory authority having jurisdiction in~~  
1042 ~~accordance with these rules. Installation of absorption systems in~~  
1043 ~~earth fill is an alternative disposal method. Conditions for use~~  
1044 ~~of alternative onsite wastewater systems are shown in R317 4 11.~~

1045 ~~B. Absorption trenches and absorption bed type systems may~~  
1046 ~~be placed in earth fill. Absorption trench systems placed in~~  
1047 ~~earth fill can only be installed over natural soils with a~~  
1048 ~~percolation rate range between five and 60 minutes per inch; and~~  
1049 ~~absorption bed systems over soils with a percolation rate range of~~

1050 ~~five to 30 minutes per inch.~~  
1051 ~~—— C. Naturally existing soil with an unacceptable percolation~~  
1052 ~~rate may be removed and replaced with earth fill with an~~  
1053 ~~acceptable, in place percolation rate, if the removal of the~~  
1054 ~~original soil does not cause other unacceptable site conditions~~  
1055 ~~and if acceptable natural soil exists below the replacement. The~~  
1056 ~~site must conform to all other acceptability conditions.~~  
1057 ~~—— D. The maximum acceptable existing slope of a site upon~~  
1058 ~~which an "at grade" or "above grade" onsite system can be placed~~  
1059 ~~with the use of earth fill is four percent.~~  
1060 ~~—— E. The minimum area of fill to be placed shall be sufficient~~  
1061 ~~to install a system sized for the number of bedrooms in the home,~~  
1062 ~~using the percolation rate of 60 minutes per inch. The fill area~~  
1063 ~~shall be sized to accommodate an absorption system for a home with~~  
1064 ~~a minimum of three bedrooms, and shall include all required~~  
1065 ~~clearances within, and outside of the fill and absorption system~~  
1066 ~~area.~~  
1067 ~~—— F. The area of original fill placement shall include that~~  
1068 ~~area required for a 100 percent replacement of the drainfield,~~  
1069 ~~with all required clearances. The area between trenches shall not~~  
1070 ~~be used for replacement area.~~  
1071 ~~—— G. The fill depth below the bottom of the absorption system~~  
1072 ~~shall not exceed six feet.~~  
1073 ~~—— H. The minimum separation between the natural ground surface~~  
1074 ~~and the anticipated maximum ground water table or saturated soil~~  
1075 ~~shall be twelve (12) inches.~~  
1076 ~~—— I. The earth fill shall be considered to be acceptably~~  
1077 ~~stabilized if it is allowed to naturally settle for a minimum~~  
1078 ~~period of one year, sized to result in its minimum required~~  
1079 ~~dimensions after the settling period. Mechanical compaction shall~~  
1080 ~~not be allowed.~~  
1081 ~~—— J. All onsite wastewater systems placed in earth fill shall~~  
1082 ~~conform to all other applicable requirements of R317-4, "Onsite~~  
1083 ~~Wastewater Systems".~~  
1084 ~~—— K. The onsite wastewater system and local area surrounding~~  
1085 ~~them shall be graded to drain surface water away from the~~  
1086 ~~absorption system.~~  
1087 ~~—— L. After the fill has settled for a minimum of one year, a~~  
1088 ~~minimum of two (2) percolation tests/soil exploration tests shall~~  
1089 ~~be conducted in the fill. One shall be conducted in the proposed~~  
1090 ~~absorption system area and one in the proposed replacement area of~~  
1091 ~~the fill. The suitably stabilized fill shall have an in place~~  
1092 ~~percolation rate of between 15 and 45 minutes per inch.~~  
1093 ~~—— M. The maximum exposed side slope for fill surfaces shall be~~  
1094 ~~four horizontal to one vertical. When fill is placed where~~  
1095 ~~finished contours are above the natural ground surface, it shall~~  
1096 ~~extend from the center of the wastewater system at the same~~  
1097 ~~general top elevation for a minimum of ten feet in all directions~~  
1098 ~~beyond the limits of the disposal area perimeter below, before the~~  
1099 ~~beginning of the side slope. A suitable soil cap, which will~~

1100 ~~support a vegetative cover, shall cover the entire fill body. The~~  
1101 ~~cap shall be provided with a vegetative cover. Access to the fill~~  
1102 ~~site shall be restricted to minimize erosion and other physical~~  
1103 ~~damage.~~

1104 ~~11.3. "At Grade" Systems.~~

1105 ~~A. Where site conditions may restrict the installation of a~~  
1106 ~~standard absorption system, an "at grade" system may be used. It~~  
1107 ~~shall be designed, installed, operated and monitored in accordance~~  
1108 ~~with these rules. An "at grade" system is considered to be an~~  
1109 ~~alternative disposal method. Conditions for use of alternative~~  
1110 ~~wastewater systems are shown in R317 4 11.~~

1111 ~~B. Absorption trenches and absorption bed type absorption~~  
1112 ~~systems may be placed in the "at grade" position. Absorption~~  
1113 ~~systems placed "at grade" can only be installed over natural soils~~  
1114 ~~with a percolation rate range between five and 60 minutes per~~  
1115 ~~inch; and absorption bed systems over soils with a percolation~~  
1116 ~~rate range of five to 30 minutes per inch.~~

1117 ~~C. The minimum distance from the top of finished grade to~~  
1118 ~~the high seasonal ground water table or perched ground water table~~  
1119 ~~shall be four feet.~~

1120 ~~D. When fill is placed where finished contours are above the~~  
1121 ~~natural ground surface, it shall extend from the center of the~~  
1122 ~~wastewater system at the same general top elevation for a minimum~~  
1123 ~~of ten feet in all directions beyond the limits of the disposal~~  
1124 ~~area perimeter below, before the beginning of the side slope.~~

1125 ~~E. The maximum side slope for above ground fill shall be~~  
1126 ~~four (horizontal) : one (Vertical).~~

1127 ~~F. Maximum acceptable slope of original site surface for~~  
1128 ~~placement of an "at grade" system is four percent.~~

1129 ~~G. The site shall be cleared of vegetation and scarified to~~  
1130 ~~an approximate depth of six inches. Any furrows resulting from~~  
1131 ~~the scarification shall be perpendicular to any slope on the site.~~

1132 ~~11.4. Mound Systems.~~

1133 ~~A. Where site conditions may restrict the use of a standard~~  
1134 ~~absorption system, a mound system may be used. It shall be~~  
1135 ~~designed, installed, operated and monitored in accordance with~~  
1136 ~~these rules. A mound system is considered to be an alternative~~  
1137 ~~disposal method. Conditions for use of alternative wastewater~~  
1138 ~~systems are shown in R317 4 11.1.~~

1139 ~~B. The minimum separation between the natural ground surface~~  
1140 ~~and the anticipated maximum ground water table or saturated soil~~  
1141 ~~shall be twelve (12) inches.~~

1142 ~~C. The two foot minimum thick unsaturated soil treatment~~  
1143 ~~horizon below the bottom of the absorption system shall consist of~~  
1144 ~~a minimum of one foot of suitable natural soil.~~

1145 ~~D. Mound systems shall not be located on sites where the~~  
1146 ~~original prevailing surface grade exceeds four percent.~~

1147 ~~E. All mound type onsite systems shall utilize pressurized~~  
1148 ~~systems for distribution of effluent in the absorption system.~~

1149 ~~F. The local health department in whose jurisdiction the~~



1200 ~~\_\_\_\_\_ C. The local health department in whose jurisdiction the~~  
1201 ~~alternative system is installed shall be responsible for~~  
1202 ~~formulation of, administration and supervision of a maintenance~~  
1203 ~~and monitoring program that is approved by the Division.~~  
1204 ~~\_\_\_\_\_ 11.6. Supplemental Requirements for Maintenance and~~  
1205 ~~Monitoring of Pressure Distribution Alternative Onsite Wastewater~~  
1206 ~~Systems.~~  
1207 ~~\_\_\_\_\_ A. These requirements are to be applied in addition to the~~  
1208 ~~requirements specified R317-4-13, where applicable.~~  
1209 ~~\_\_\_\_\_ B. These systems shall be monitored every six months~~  
1210 ~~throughout the life of the system. Repairs shall be made at any~~  
1211 ~~time to a malfunctioning system, as soon as possible after the~~  
1212 ~~malfunction is discovered.~~  
1213 ~~\_\_\_\_\_ C. The local health department in whose jurisdiction the~~  
1214 ~~pressurized system is installed shall be responsible for~~  
1215 ~~formulation of, administration and supervision of a maintenance~~  
1216 ~~and monitoring program that is approved by the Division.~~  
1217 ~~\_\_\_\_\_ D. Additional requirements for maintenance of these systems~~  
1218 ~~are contained in "Mound Soil Absorption System Siting, Design and~~  
1219 ~~Construction Guidance Manual, April 1, 1996", which is hereby~~  
1220 ~~incorporated by reference. A copy is available for public review~~  
1221 ~~from the Division of Water Quality, 288 North 1460 West, P.O. Box~~  
1222 ~~144870, Salt Lake City, UT, 84114-4870.]~~

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*Sections R317-4-12 and 13 are not included herein as there is no*  
1226 *change in those sections. A complete copy is available from the*  
1227 *Division of Water Quality if desired.*

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1231 **KEY: waste water, onsite wastewater systems, alternative onsite**  
1232 **wastewater systems, septic tanks**  
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